Webinar Transcript - Identifying Children with Hearing Loss: The Key Role of School Nurses in Evidence-Based Screening – October 2nd, 2024

All right. For logistical purposes, Kathy, let me just say a couple of things. Sure. Today's webinar is being recorded. So everything that you learn today is not just going to go swishing past you. If you want to come back to this webinar or if you'd like to share it with others, you can review it on our website, which is kidshearing.org. We'll be talking a lot about that website during today's webinar. This webinar is also going to be repeated live on October 10th. So just keep that in mind for those who aren't in attendance today, whom you think may benefit from today's webinar. We're not going to try to monitor the chat during our presentation today, but we will at the end, open up for questions and comments. So hold your questions if you will, until we're at that point. So let me turn it over then to Kathy.

Sure. And I will also say, knowing how busy school nurses are, if perchance you have to sign off today, there's another chance to come back to it next week or the recording. But hello, I am Cathy Yonkaitis and I am the co-editor of the School Nursing Comprehensive textbook and the editor in chief for NASN School Nurse Journal. I'm really excited to participate in the webinar today. This all came about because Doctor Eisenman, who I will officially introduce in a moment, reached out to me about how we might increase school nurse knowledge around evidence-based hearing screening and referral. This resulted in the start of our professional friendship as well as this webinar and a newly published article in NASN School Nurse on this very topic.

Many of you probably know I am not a hearing expert, right? I'm just a school nurse, but I'm not a hearing expert. However, I am passionate about school nursing and evidence-based practice and evidence-based care. So, I'll participate here today, just here and there, but my two colleagues are hearing experts, and they are going to share best practices with us for hearing screening for children.

Thank you, Kathy. A giant thank you to NASN and the leadership of NASN, who have been incredibly welcoming to us—Kim Granados, Terry Hinckley, and others. Now, at the end of today's presentation, we'll have a short evaluation of how we did that will generate a certificate of participation for you. If that is of importance to you, make sure you hang on to do that at the end.

We are really excited to be here. I, William Eiserman, am the director of the Early Childhood Hearing Outreach Initiative (Echo Initiative) at Utah State University, housed in the National Center for Hearing Assessment and Management (NCHAM). Since 2001, the Echo Initiative has served as a national resource center on early hearing detection and intervention. Initially focusing on early childhood programs like Early Head Start, it has expanded into school-age populations.

Now, I'm joined today by the real hearing expert, Dr. Terry Foust, who is a pediatric audiologist and speech-language pathologist. He has served with us as a consultant and trainer with the Echo Initiative since the beginning. Terry, thanks for being with me and Kathy today.

Thank you, William. It’s a pleasure. As William said, we’ve provided training and almost nearly every state with thousands of staff in early intervention programs and education settings. We are thrilled to share our experience with you today.

I want to acknowledge how impressed we are by all of you who are school nurses. Much of our work has focused on identifying hearing loss in children during the first 3-5 years of life. This year’s NASN conference was my first exposure to all that you are responsible for, and it was humbling.

Terry and I recognize that the piece we are discussing today—hearing screening and follow-up—is a small part of your responsibilities. We want to offer information and resources to make your hearing screening efforts as effective as possible. We also aim to ensure children with permanent hearing loss are identified and supported with appropriate services.

Now, the work of the Echo Initiative is based on the recognition that each day, children who are deaf or hard of hearing are attending school and receiving health care services without their hearing-related needs being known. Hearing loss is often considered an invisible condition. The question we're faced with is how to identify which children have normal hearing and which may not.

The short answer is that healthcare and education providers like us and you can be trained to conduct evidence-based hearing screening and follow-up practices, as you see depicted in these photos. The ultimate outcome of a hearing screening program is identifying children who are deaf or hard of hearing and have not been identified previously. Hearing loss can range in severity and may affect one or both ears.

You probably recognize the procedure on the right, Pure Tone Audiometry, the most commonly used screening method for children three years and older. You might be using this method now. On the left, you'll see Otoacoustic Emissions (OAE) screening. Introduced in the 1990s and widely adopted as part of newborn hearing screening in the 2000s, OAE has gained acceptance for screening children from birth to three years old and is increasingly recommended for children three years old and older.

Today, we're going to talk about both of these methods. You're going to hear us emphasize evidence-based practices, which include three components: using recommended methods specific to the child’s age and developmental level, implementing follow-up when children don’t pass the screening, and documenting all screening outcomes. It’s essential to ensure that children who don’t pass receive follow-up in a timely manner.

It’s common for most of the energy to go into just the first step—conducting screenings. But, those efforts are only as valuable as our ability to ensure follow-up for children who don’t pass. Follow-up is an essential indicator of how well a program is being implemented. Those responsible for hearing screenings need to report how many children they screened, the pass/fail rates, how many children were referred for further evaluation, and how many children were identified with permanent hearing loss.

So from what you've said, William, evidence-based hearing screening programs are much more than just using the recommended screening method and screening as many children as possible. We want to make sure your efforts aren't just focused on screenings, but on ensuring follow-up and quality reporting. The ultimate goal is to identify and serve children with hearing loss.

Now, Terry, let's set the stage with a quick review of the auditory system. As you all know, there are three main parts to the auditory system: the outer ear, the middle ear, and the inner ear (or cochlea). Sound enters the outer ear, causes the eardrum to vibrate, and moves the three small bones in the middle ear. This movement stimulates tiny hair cells in the cochlea. From there, the sound travels through the auditory nerve to the brain, resulting in what we call sound.

However, there can be exceptions, such as temporary issues like a wax blockage or fluid in the middle ear from infections, which can be identified and addressed during screenings. But the primary target of our screening is the cochlea and its functioning. Sometimes, sound reaches the cochlea, but the signal isn't transmitted to the brain, resulting in sensorineural hearing loss, which is usually permanent.

So, we need to screen throughout childhood because hearing loss can occur at any time due to illness, trauma, environmental, or genetic factors. When this happens, it's called late-onset hearing loss, which can be acquired after the newborn period. Permanent hearing loss is often referred to as the "invisible disability" and is the most common birth defect in the U.S. It affects 3 in 1000 children at birth, doubles by the time children enter school, and increases steeply during the school years to about 50 in 1000.

Hearing loss may be invisible, but these children cannot be invisible—they need to be seen. If we don't identify hearing loss early, these children may be misdiagnosed with learning disabilities, mental health needs, or even being on the autism spectrum. This happens all too often. Speech therapy and educational interventions are unlikely to be very effective if there's an unidentified hearing loss.

This underscores the importance of quality hearing screening and follow-up systems, and the role you can play in advocating for these practices. It's crucial to ensure that hearing loss is considered, especially for children in special education.

Now, let's talk about the first component of evidence-based hearing screening: using recommended methods appropriate to the child's age and developmental level. As we mentioned earlier, Pure Tone Audiometry and OAE screening are the recommended methods. The availability of both Pure Tones and OAE means it's no longer appropriate to rely solely on subjective methods like using sound makers or caregiver perceptions.

Observations of a child's response to sound can be helpful, but they don't constitute a reliable hearing screening. Our current technology allows for much more accuracy. You probably recognize the Pure Tones method, either because you use it or have had your own hearing screened this way. In this procedure, tones are presented through headphones, and children respond by raising their hand or making a behavioral indication of hearing the sound.

Pure Tones screening gives us a good idea of the functioning of the entire auditory system. It's relatively affordable and portable, making it easy to transport. A wide range of individuals can be trained to perform Pure Tone screening, but it requires formal training and annual refresher training to ensure the procedure is done correctly.

One of the key aspects of Pure Tones screening is making sure it’s performed in an environment with minimal background noise, which can affect the results. We’ve seen instances where screener mistakes can invalidate the entire process. Some common mistakes include improper headphone placement, giving visual cues to the child, or presenting tones in a predictable pattern.

Because Pure Tones screening is trickier than it seems, we offer a comprehensive online training that includes a checklist for maintaining compliance with evidence-based practice. The process needs to be followed exactly to ensure that the screening is valid.

Now, while Pure Tones is effective, not all children can be screened using this method. For younger populations, we wouldn’t be surprised if 20-25% of children are not able to be screened with Pure Tones. Children with different primary languages or certain disabilities may also not be screened with this method. That’s why it's important to have a backup plan for children who can't be screened with Pure Tones.

This brings us to OAE screening, which is recommended for children birth to three years of age and is increasingly being used for older children. OAE screening works by placing a small probe in the ear canal, which delivers a sound stimulus. If the cochlea is functioning normally, an emission is produced and analyzed by the screening unit. The results are displayed as either pass or refer.

Unlike Pure Tones screening, OAE is fully automated, which reduces the chances of human error. It’s also easier to complete, especially for older children, and the entire process only takes about 30 seconds.

Many schools and healthcare providers are switching to OAE for all children due to its ease and speed. However, it’s important to check with your state and local regulations, as some may still require Pure Tones screening. Fortunately, there are combined units that offer both Pure Tones and OAE screening in one device, allowing for a backup method when needed.

Regardless of which method you use, it’s essential to have a follow-up protocol for children who don’t pass the screening. If a child doesn’t pass the first screening, it doesn’t necessarily mean they have hearing loss. Sometimes temporary conditions like a cold can affect the results. That’s why we wait about two weeks before rescreening the ear that didn’t pass.

If the child doesn’t pass the second screening, they will need further evaluation from a healthcare provider. Most children will pass the rescreen after treatment, but for those who don’t, a referral to a pediatric audiologist is required.

Remember, the screening process is only complete when a child passes on both ears or has been evaluated by an audiologist, and we have documented the results. It's not enough to simply send a referral letter home—follow-up must be documented and completed.

Now, let's discuss the documentation component of evidence-based practice. You'll need to keep track of screening outcomes, referrals, diagnostic evaluations, and whether children identified with hearing loss are receiving the necessary supports. This can be a heavy lift, but there are resources available to help, including our website, kidshearing.org, where you'll find planning resources, checklists, referral forms, and more.

It's important to use others when you can, such as volunteers or community liaisons, to help with follow-up and connecting families to resources. Be sure to communicate clearly with families and provide referral forms in their primary language.

Before we conclude, we want to remind everyone that this webinar has been recorded and will be available on our website. Thank you to everyone for your participation today. We hope the resources and information we provided will help you in your hearing screening efforts.